IN THE CLAIMS

Claims 1, 2, 4-12 and 14-20 (Canceled).

--21. (New) Demodulation structure for downconverting and demodulating a digitally modulated signal, comprising:

a local oscillator means for providing a local oscillator signal,

a mixer means for mixing said local oscillator signal and said digitally modulated signal in order to obtain a mixed signal,

a low pass filter means for low pass filtering said mixed signal from said mixer means, and

an analog-to-digital converting means for converting the filtered signal from said low pass filter means into a downconverted and demodulated digital signal,

whereby said local oscillator signal is set in respect to said modulated digital signal so that said downconverted and demodulated digital signal output from said analog-to-digital converting means comprises two serially arranged information parts, and

wherein said digitally modulated signal is modulated in a signal band having a center frequency and said local oscillator signal has a center frequency, which is, in respect to said center frequency of the signal band, offset by half of the signal band width of the modulated digital signal.—

--22. (New) Demodulation structure for downconverting and demodulating a digitally modulated signal, comprising:

a local oscillator means for providing a local oscillator signal,

a mixer means for mixing said local oscillator signal and said digitally modulated signal in order to obtain a mixed signal,

a low pass filter means for low pass filtering said mixed signal from said mixer means, and

an analog-to-digital converting means for converting the filtered signal from said low pass filter means into a downconverted and demodulated digital signal,

whereby said local oscillator signal is set in respect to said modulated digital signal so that said downconverted and demodulated digital signal output from said analog-to-digital converting means comprises two serially arranged information parts whereby said local oscillator signal is modulated with at least two modulation states having different phases during the symbol period of the modulated digital signal a modulation control means for supplying a modulation signal to said local oscillator means in order to internally modulate the local oscillator signal with said two modulation states.

--23. (New) Demodulation structure according to claim 21, characterized in, that said digitally modulated signal is I/Q-modulated and said two serially arranged information parts comprised in said downconverted and demodulated digital signal are an I-part and a Q-part of the I/Q-modulated digital signal.—

--24. (New) Demodulation structure according to claim 22, characterized in, that said digitally modulated signal is I/Q-modulated and said two serially arranged information

parts comprised in said downconverted and demodulated digital signal are an I-part and a Q-part of the I/Q-modulated digital signal.--

--25. (New) Demodulation structure according to claim 22, characterized in, that said two different modulation states have the same magnitude and a 90 degree phase shift in respect to each other.--

--26. (New) Demodulation structure according to claim 22, characterized by a band pass filter for band pass filtering said modulated local oscillator signal.--

--27. (New) Demodulation structure according to claim 26, characterized in, that said band pass filter has a center frequency corresponding to the center frequency and a bandwidth corresponding to the bandwidth of the signal band of the modulated digital signal.--

--28. (New) Method for downconverting and demodulating a digitally modulated signal, comprising the steps of:

providing a local oscillator signal,

mixing said local oscillator signal and said digitally modulated signal in order to obtain a mixed signal,

low pass filtering said mixed signal, and

analog-to-digital converting the filtered signal into a downconverted and demodulated digital signal,

whereby said local oscillator signal is set in respect to said modulated digital signal so that said downconverted and demodulated digital signal comprises two serially arranged information parts, and

wherein that said digitally modulated signal is modulated in a signal band having a center frequency and said local oscillator signal has a center frequency, which is, in respect to said center frequency of the signal band, offset by half of the signal band width of the modulated digital signal.—

--29. (New) Method for downconverting and demodulating a digitally modulated signal, comprising the steps of:

providing a local oscillator signal,

mixing said local oscillator signal and said digitally modulated signal in order to obtain a mixed signal,

low pass filtering said mixed signal, and

analog-to-digital converting the filtered signal into a downconverted and demodulated digital signal,

whereby said local oscillator signal is set in respect to said modulated digital signal so that said downconverted and demodulated digital signal comprises two serially arranged information parts,

whereby said local oscillator signal is modulated with at least two modulation states having different phases during the symbol period of the modulated digital signal, and

whereby the local oscillator signal is internally modulated with said two modulation states by means of a supplied modulation signal.—

--30. (New) Method according to claim 28, characterized in, that said digitally modulated signal is I/Q-modulated and said two serially arranged information parts comprised in said downconverted and demodulated digital signal are an I-part and a Q-part of the I/Q-modulated digital signal.—

--31. (New) Method according to claim 29, characterized in, that said digitally modulated signal is I/Q-modulated and said two serially arranged information parts comprised in said downconverted and demodulated digital signal are an I-part and a Q-part of the I/Q-modulated digital signal.—

--32. (New) Method according to claim 29, characterized in, that said two different modulation states have the same magnitude and a 90 degree phase shift in respect to each other.—

--33. (New) Method according to one of the claim 32, characterized by band pass filtering said modulated local oscillator signal.--

--34. (New) Method according to claim 33, characterized in, that said band pass filter step uses a center frequency corresponding to the center frequency fc and a bandwidth corresponding to the bandwidth of the signal band of the modulated digital signal.--